Split Unit Gateway SUG/U 1.1
ABB i-bus® KNX
Jürgen Schilder – Global Application and Solution Team
Split Unit Gateway SUG/U 1.1

Introduction
An air-conditioning system produces and maintains a pleasant or required level of room air quality (temperature, humidity, purity and CO₂ content) independently of the weather, waste heat or human and technical emissions.

The task of the air-conditioning system is to bring the air in a room into a certain condition and to maintain this condition ("conditioning").

An air-conditioning system is often misunderstood to be merely an air-cooling system.

However the functions of an air-conditioning system are:

1. changing the air temperature (heating or cooling),
2. changing the humidity (humidifying or dehumidifying),
3. removing air constituents (filtering or exchanging).

Many small air-conditioning systems do not perform all of these functions, but they are referred to as air-conditioning systems if they at least perform the cooling function.

Air-conditioning systems produce a room climate that people perceive as pleasant. This climate is usually assumed to be a temperature of around 22 °C and a relative humidity value of around 50%.

Source: WIKIPEDIA
Central building air-conditioning systems

With central air-conditioning systems, the air-treatment functions – air conveyance, filtering, temperature control, humidification and dehumidification – are performed in a central air supply and extraction device.

Air ducts branch from this unit to the individual rooms.

Central air-conditioning systems are considered to be proven solutions.

Requirements regarding air quality, quiet operation, humidity, freedom from drafts, and temperature can be met.

Source: WIKIPEDIA
Decentralized building air-conditioning systems

Decentralized air-conditioning systems were developed by adding a ventilation and heating function to the window-mounted air conditioners commonly used in the hot regions of Asia and America.

They are preferentially used for retrofitting in individual rooms (ceiling, wall or parapet).

Decentralized air-conditioning systems permit a custom scheme for flexible room utilization.

Source: WIKIPEDIA
Split Unit Gateway SUG/U 1.1

Overview of air-conditioning systems

Decentralized building air-conditioning systems

Split units

– With a decentralized air-conditioning system in the form of a split unit, the refrigerant is compressed outdoors, while the air-treatment processes (air conveyance, filtering and temperature control) are performed in the room to be cooled

– Many small units only recirculate the room air to cool it

– Some devices draw in a small amount of air ahead of the facade (independently of the building’s orientation), blow it into the room and usually discharge the same quantity of exhaust air from the room to the outside

Source: WIKIPEDIA
What is a Split Unit Gateway?

Many manufacturers’ air-conditioning units, so-called split units, are operated using an infrared remote control from the manufacturer. The Split Unit Gateway now replaces this remote control.

The Split Unit Gateway forms the interface between the KNX system and the air-conditioning systems from many manufacturers, also referred to as split units.

It allows users to integrate the split unit into a KNX system for convenient, energy efficient control.
The Split Unit Gateway is installed near the split unit, and the transmitter of the supplied cable is bonded directly to the receiver of the split unit. The device converts KNX telegrams to infrared commands and sends them to the split unit. This makes it possible to control the split unit via KNX group commands. The air-conditioning system then no longer receives the commands from a remote control but instead can be operated via any KNX sensors or via a visual display.
What is a Split Unit Gateway?

Split unit (interior unit)

Integrating the split unit into a KNX system

Split unit (interior unit)

Operation via manufacturer’s IR remote control

Manufacturer’s IR remote control is replaced

IR transmitter with cable

KNX sensor (e.g. presence detector)

KNX sensor (e.g. button)

Split Unit Gateway SUG/U 1.1
Split Unit Gateway SUG/U 1.1

Overview

Split unit (interior unit)

IR transmitter with cable

Split Unit Gateway SUG/U 1.1

Button

Room thermostat

Presence detector

Window contact

Touch display

Timer switch

KNX
Integration into the i-bus® Tool

The device possesses an interface to the i-bus® Tool

The i-bus® Tool can be used to read out data and test functions on the connected device

The i-bus® Tool can be downloaded free from the ABB website (www.abb.com/knx)

ETS is not required for the software tool

A description of the functions is provided in the i-bus® Tool online help
Product overview

Flush-mounted device for installation in a flush-mounted or surface box

Dimensions 39 x 40 x 12 mm (H x W x D)

Connection terminal for IR cable and KNX

The transmission diode of the supplied IR cable is bonded directly to the receiver of the split unit

Power supply is via the ABB i-bus® KNX; no additional auxiliary voltage is required

Red LED and button for assignment of the physical address
Split Unit Gateway SUG/U 1.1

Device functions – software

Parameterization is performed using the ETS4 or ETS5 software

The free “ABB SUG/U 1.1” ETS App available from the KNX Online Shop must also be installed

Further parameters* permit functions such as
- Fan speed control
- Horizontal and vertical swing
- Swing activation
- Specification of setpoint temperature and limitation
- Activation of Silent Mode
- Scene and boost function
- Status messages

* If the function is supported by the split unit device
# Split Unit Gateway SUG/U 1.1

## Overview

<table>
<thead>
<tr>
<th>Design</th>
<th>Flush-mounted device</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order code</td>
<td>2CDG 110 207 R0011</td>
</tr>
<tr>
<td>List price</td>
<td>€180.00</td>
</tr>
<tr>
<td>Launch</td>
<td>available</td>
</tr>
</tbody>
</table>
**Product documentation**

- Product Manual
- Technical datasheet
- Installation and operating instructions

Training & Qualification Database
- Presentation slides
- Webinar slides
- Webinar Video recording (English) (MP4 file on YouTube)
Technical documents

www.abb.com/KNX

→ Product category
    → Heating, Ventilation & Air Conditioning
    → Split Unit Gateway SUG/U 1.1

- ETS4 and ETS5 application software
- Product Manual
- Technical datasheet
- Installation and operating instructions
- Text for bid invitation
- Product information
- Presentation slides
- CE declaration of conformity
- • • •
A

The electric consumption values of split unit devices can be wirelessly transmitted to a KNX system.

B

Commands can be conveniently sent to a KNX system using the remote controls of split unit devices.

C

It allows air-conditioning systems (split units) from various manufacturers to be integrated into a KNX system for convenient and energy efficient control.
Split Unit Gateway SUG/U 1.1

What is the purpose of a Split Unit Gateway SUG/U 1.1?

A) The electric consumption values of split unit devices can be wirelessly transmitted to a KNX system.

B) Commands can be conveniently sent to a KNX system using the remote controls of split unit devices.

C) It allows air-conditioning systems (split units) from various manufacturers to be integrated into a KNX system for convenient and energy efficient control.

Integration of air-conditioning systems into a KNX system
Split Unit Gateway SUG/U 1.1

Which answer is correct?

**Question 2**

**How does the Split Unit Gateway communicate with the split unit device?**

- **A** Communication between the Split Unit Gateway and the split unit device takes place using wiring via an RS485 bus.

- **B** An IR transmitter at the end of the Split Unit Gateway cable is bonded directly onto the split unit receiver and sends IR commands.

- **C** The Split Unit Gateway transmits the commands to compatible split unit devices using the standardized “EnOcean” radio transmission protocol.
How does the Split Unit Gateway communicate with the split unit device?

**A** Communication between the Split Unit Gateway and the split unit device takes place using wiring via an RS485 bus.

**B** An IR transmitter at the end of the Split Unit Gateway cable is bonded directly onto the split unit receiver and sends IR commands.

**C** The Split Unit Gateway transmits the commands to compatible split unit devices using the standardized “EnOcean” radio transmission protocol.
Question 3

How are split unit devices controlled via KNX?

A. A central Split Unit Gateway cyclically polls KNX sensors (e.g. buttons or presence detectors), converts the response telegrams into infrared commands and forwards them to all split unit devices.

B. A Split Unit Gateway receives the group telegrams sent by KNX sensors (e.g. buttons or presence detectors), converts them into infrared commands and forwards them to a split unit device.

C. The Split Unit Gateway can receive only 8-bit scene telegrams, decode them, convert them into infrared commands and forward them to a split unit device.
A central Split Unit Gateway cyclically polls KNX sensors (e.g. buttons or presence detectors), converts the response telegrams into infrared commands and forwards them to all split unit devices.

A Split Unit Gateway receives the group telegrams sent by KNX sensors (e.g. buttons or presence detectors), converts them into infrared commands and forwards them to a split unit device.

The Split Unit Gateway can receive only 8-bit scene telegrams, decode them, convert them into infrared commands and forward them to a split unit device.

**Question 3**

**How are split unit devices controlled via KNX?**

- **A**
  - A central Split Unit Gateway cyclically polls KNX sensors (e.g. buttons or presence detectors), converts the response telegrams into infrared commands and forwards them to all split unit devices.

- **B**
  - A Split Unit Gateway receives the group telegrams sent by KNX sensors (e.g. buttons or presence detectors), converts them into infrared commands and forwards them to a split unit device.

- **C**
  - The Split Unit Gateway can receive only 8-bit scene telegrams, decode them, convert them into infrared commands and forward them to a split unit device.

**Receiving and converting KNX telegrams and sending the IR signals**
Split Unit Gateway SUG/U 1.1

Basis – planning
Planning

The appropriate standards, directives, regulations and specifications of the appropriate country should be observed when planning and setting up electrical installations

– KNX international standard: ISO/IEC 14543 and EN 50090

Operate the device only within the specified technical data

The maximum permissible current of a KNX line must not be exceeded

Ensure that the KNX line is correctly dimensioned

This device features a maximum current consumption of 12 mA (Fan-In 1)

The Split Unit Gateway is installed in a flush-mounted or surface box near (max. 2 m) the split unit and is connected to the split unit using the supplied IR cable

The IR cable is plugged into the designated socket of the Gateway, and the transmitter is affixed to the Split Unit’s receiver using the double-sided adhesive tape
Observations

The split unit devices differ in their scope of functions in some cases

– Not all functions are available on every split unit
  • In other words, when parameterizing the ETS application, you need to check whether the split unit actually supports a particular function
  • Certain functions that are available in the ETS application (e.g. Silent Mode) may not be supported by the split unit
  • This in turn means that a group telegram to this object will have no effect

– Not all split unit devices have exactly three fan speeds
  • If a split unit has more than three fan speeds, only three speeds are mapped to the Low/Medium/High speeds available in ETS
  • Example: If a split unit has five fan speeds, speeds 1/3/5 are mapped to Low/Medium/High
The split unit devices differ in their scope of functions in some cases.

- During parameterization you need to select the split unit manufacturer and the remote control type in ETS before performing the ETS download.
  - To do this, you will need the “ABB SUG/U Configuration” ETS App, which is available free from the KNX Online Shop.
  - The app also displays the range of functions on the split unit and, if applicable, which ones were mapped.

- Communication with the split unit device is unidirectional.
  - This means that the Split Unit Gateway sends commands to the split unit, but receives no status feedback from it.
  - So if the split unit is being operated in parallel with a remote control, the (status) state of the gateway may differ from the actual state of the split unit. The same applies if the split unit is not ready to receive.
**ABB i-bus KNX Split Unit Gateway SUG/U 1.1**

**Basis – planning**

**Technical data**

Supply voltage: ABB i-bus KNX (21…31 V DC)  
Current consumption: max. 12 mA  
Power loss: max. 0.4 W  
Connection terminal: plug-in terminal for IR cable (supplied)  
IR cable: length 2 m  
KNX connection: bus connection terminal  
Dimensions: 39 x 40 x 12 mm (H x W x D)  
Weight: 0.02 kg  
Installation: in flush-mounted or surface box (near the split unit)  
Temperature range in operation (Tu): -5 °C ... +45 °C  
Type of protection: IP 20 in the installed state according to EN 60 529  
Safety class: III according to DIN EN 61 140  
Approvals: KNX according to EN 50 090-1, -2
The split unit’s functions can therefore be operated via KNX using any operating elements

- On/Off
- Specify setpoint temperature including parameterizable setpoint temperature limits
- Set operating mode (Automatic, Heating, Cooling, Ventilation, Drying)
- Fan speed control (1-bit / 1-byte)
- Horizontal swing
- Vertical swing
- Silent Mode
- Simplified Mode
Software functions

On/Off
- Switching the split unit on or off. A switching ON/OFF delay can be optionally parameterized
Specify setpoint temperature including parametrizable setpoint temperature limits
- The setpoint is sent to the split unit. Regulation is then performed by the split unit itself
- The setpoint temperature can be sent directly (2-byte value) or adjusted up/down by 1 bit

Set operating mode (Automatic, Heating, Cooling, Ventilation, Drying)
- These are the standard operating modes for most split units.

Fan speed control
- Fan speeds can be controlled by a 1-byte value (with different codes) and/or adjusted up/down by 1 bit

Horizontal and vertical swing
- Slat movement can be activated/deactivated on many split units

Activate Silent Mode
- The exterior unit of the split unit operates at reduced power (less noise)
In addition, the following functions can be parametrized via KNX:

– Reaction on ETS programming, bus voltage failure and recovery
– Access with i-bus® Tool
– Forced operation
– Window contact
– Presence
– Scene (8 bit)
– Boost
– Status objects
ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Basis – planning

**Functional description of operation**

The split unit can be operated via KNX using any operating elements (e.g. buttons, touch display, smartphone)

The Split Unit Gateway sends the respective current status on the KNX

It can be indicated on the rocker switch LEDs

Example: button with four rocker switches

<table>
<thead>
<tr>
<th>Rocker switch 1</th>
<th>Object function</th>
<th>Left</th>
<th>Right</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>On/Off</td>
<td>On</td>
<td>Off</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rocker switch 2</th>
<th>Fan speed</th>
<th>Up</th>
<th>Down</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Rocker switch 3</th>
<th>Setpoint temperature</th>
<th>19 °C</th>
<th>21 °C</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Rocker switch 4</th>
<th>Setpoint temperature</th>
<th>23 °C</th>
<th>24 °C</th>
</tr>
</thead>
</table>
Functional description of operation

The split unit can be operated via KNX using a room thermostat.

The rocker switches can change the setpoint temperature, switch on/off and increase/decrease the fan speed.

<table>
<thead>
<tr>
<th>Object function</th>
<th>Left</th>
<th>Right</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rocker switch 1</td>
<td>On/Off</td>
<td>Off</td>
</tr>
<tr>
<td>Rocker switch 2</td>
<td>Up</td>
<td>Down</td>
</tr>
<tr>
<td>Rocker switch 3</td>
<td>Up</td>
<td>Down</td>
</tr>
</tbody>
</table>
A window contact (magnetic contact) is connected to an input of a KNX Security Terminal and sends the open/closed state of the window to the Split Unit Gateway.

When a window is open, the function “Window contact” is activated with a higher priority and the split unit is switched off (optional OFF delay).

Closing the window deactivates the function, and the split unit can be operated again.
ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Basis – planning

**Functional description of presence**

A presence detector automatically detects a person in the room, activates the function “Presence” and the parameterized state is established, e.g.

- Split unit ON, AUTO mode, setpoint temperature 22 °C, fan speed AUTO, ...

After the room is left (including a run-on time), the function “Presence” can be deactivated and the parameterized state is established

- Split Unit ON/OFF/unchanged

The function “Presence” can also be activated and deactivated via a card reader (e.g. hotel room)
The function “Scenes” can be used for convenient recall of various scenes, e.g. in a conference/training room

- Welcome scene
- Presentation scene
- Break scene

The parameterized state is established as soon as the corresponding scene is recalled

<table>
<thead>
<tr>
<th>Scene</th>
<th>Welcome</th>
<th>Presentation</th>
<th>Pause</th>
<th>End</th>
</tr>
</thead>
<tbody>
<tr>
<td>Split unit</td>
<td>On</td>
<td>On</td>
<td>Unchan.</td>
<td>Off</td>
</tr>
<tr>
<td>Setpoint temp.</td>
<td>21 °C</td>
<td>21 °C</td>
<td>22 °C</td>
<td>-</td>
</tr>
<tr>
<td>Operat. mode</td>
<td>Auto</td>
<td>Auto</td>
<td>Ventil.</td>
<td>-</td>
</tr>
<tr>
<td>Fan speed</td>
<td>Low</td>
<td>Auto</td>
<td>High</td>
<td>-</td>
</tr>
<tr>
<td>Slat adjustment</td>
<td>Start</td>
<td>Unchan.</td>
<td>Start</td>
<td>-</td>
</tr>
</tbody>
</table>
Split Unit Gateway SUG/U 1.1

Basis – planning: Which answer is correct?

Question 1

What auxiliary voltage does the Split Unit Gateway require?

A  12...24 V DC

B  100...240 V AC

C  No auxiliary voltage required
Question 1

What auxiliary voltage does the Split Unit Gateway require?

A. 12...24 V DC

B. 100...240 V AC

C. No auxiliary voltage required
Question 2

What connections does the Split Unit Gateway have?

A. EnOcean radio module and RS485 bus

B. KNX bus connection terminal, plug-in terminal for the IR cable and EnOcean radio module

C. KNX bus connection terminal and plug-in terminal for the IR cable

Basis – planning: Which answer is correct?
Split Unit Gateway SUG/U 1.1

Basis – planning: Which answer is correct?

**Question 2**

What connections does the Split Unit Gateway have?

- **A** EnOcean radio module and RS485 bus
- **B** KNX bus connection terminal, plug-in terminal for the IR cable and EnOcean radio module
- **C** KNX bus connection terminal and plug-in terminal for the IR cable
Question 3

Which additional functions does the Split Unit Gateway offer?

A. Scenes, forced operation and presence

B. Forced operation, binary input and power measurement

C. Pulse counting, LED activation and scenes
Question 3

Which additional functions does the Split Unit Gateway offer?

- **A** Scenes, forced operation and presence
- **B** Forced operation, binary input and power measurement
- **C** Pulse counting, LED activation and scenes

Forced operation – presence – window contact – scene – boost
Installation

Attention! Hazardous voltage! Mounting and commissioning may be carried out only by electrical specialists

The appropriate standards, directives, regulations and specifications of the appropriate country should be observed when planning and setting up electrical installations

The device must not be operated outside the specified technical data

Refer to the product manual or the installation and operating instructions for a detailed description of installation and commissioning

<table>
<thead>
<tr>
<th>Montage- und Betriebsanleitung</th>
<th>Installation and Operating Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instrucciones de montaje de servicio</td>
<td>Mode d’emploi</td>
</tr>
<tr>
<td>Istruzioni per l’uso</td>
<td>Instrukcja montażu i eksploatacji</td>
</tr>
<tr>
<td>Montage- en bedieningshandleiding</td>
<td>Руководство по монтажу и эксплуатации</td>
</tr>
<tr>
<td>安装和操作手册</td>
<td>SUG/U 1.1 Split Unit Gateway</td>
</tr>
<tr>
<td>DE</td>
<td>EN</td>
</tr>
<tr>
<td>FR</td>
<td>ES</td>
</tr>
<tr>
<td>IT</td>
<td>NL</td>
</tr>
<tr>
<td>PL</td>
<td>RU</td>
</tr>
<tr>
<td>CN</td>
<td></td>
</tr>
</tbody>
</table>
ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Scope of delivery

- Split Unit Gateway SUG/U 1.1 with
  - Installation and operating instructions
  - Bus connection terminal
  - IR cable (2m) with transmitter and double-sided adhesive tape

The device is supplied with the physical address 15.15.255 and a preloaded application.
Connection diagram, controls/indicators

1. KNX connection
2. IR cable connection
3. Programming LED (red)
   LED lights up when the programming button is pressed, in order to assign a physical address to the bus device
4. Programming button
   For assignment of the physical address
Mounting and installation

The device is suitable for mounting in a flush-mounted or surface box
Maintain a distance of max. 2 m from the split unit device
The Gateway can be installed in any position
Accessibility of the device for the purpose of operation, testing, visual inspection, maintenance and repair must be provided compliant to DIN VDE 0100-520
The connection to the KNX bus is implemented using the supplied bus connection terminal
The terminal assignment is located on the housing
The device is ready for operation after connection to the bus voltage
Refer to the installation and operating instructions for more information about installation
Mounting the infrared cable

The Split Unit Gateway is connected to the split unit using the supplied IR cable
The IR cable must be installed at least 6 mm away from 230 V power sources
The IR cable must not be kinked or strained
The IR cable is plugged into the designated socket of the Gateway
Strain relief must be provided
The IR transmitter is affixed to the split unit’s receiver using the double-sided adhesive tape
The correct position can be determined using the i-bus® Tool
(see commissioning – “i-bus® Tool: transmitter positioning”)

Important
- The bonding surface for the transmitter must be dry, clean and free from grease
- Processing must take place at room temperature (at least 10 °C)
- Press firmly into place
- The final adhesive force is reached after 24 h
Installation steps

All poles must be disconnected when expanding or modifying the electrical connections

Connecting the line for KNX

Plug the IR cable into the designated socket of the Gateway and affix the IR transmitter to the split unit’s receiver using the double-sided adhesive tape

Mounting the Gateway in a flush-mounted/surface housing

Connecting the bus voltage

- Starting the device
- The Split Unit Gateway is ready for operation and can be put into operation using the ETS
Testing and troubleshooting

Test of the KNX bus voltage

- Press the programming button (4)
  - “Programming” LED lights up red: KNX is available; press the button again to switch off the LED
  - “Programming” LED (3) does not light up: KNX is not available
Check whether KNX is available (e.g. use a measuring instrument to measure the bus voltage between the red and black wires, 20-29 V DC)
Question 1

The Split Unit Gateway is suitable for installation

A. In a flush-mounted or surface box
B. In distributors on 35 mm mounting rail
C. As plug-in module in Room Controller RC/A
Question 1

The Split Unit Gateway is suitable for installation

A. In a flush-mounted or surface box
B. In distributors on 35 mm mounting rail
C. As plug-in module in Room Controller RC/A
How can operational readiness be checked?

A. Press the “Manual operation” button for longer than 2 seconds. The “Programming” LED flashes green (slowly)

B. After bus voltage recovery, the “Programming” LED flashes green until the device has been programmed for the first time

C. The “Programming” LED lights up red when the programming button is pressed
How can operational readiness be checked?

A. Press the “Manual operation” button for longer than 2 seconds. The “Programming” LED flashes green (slowly)

B. After bus voltage recovery, the “Programming” LED flashes green until the device has been programmed for the first time

C. The “Programming” LED lights up red when the programming button is pressed

Press the programming button ➔ LED lights up red
ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Which answer is correct?

**Question 3**

How is the Split Unit Gateway connected to the split unit device?

- **A** The cable is plugged onto the analog slot of the main printed circuit board in the split unit

- **B** The IR transmitter of the cable is affixed to the split unit’s receiver using the double-sided adhesive tape

- **C** The IR transmitter can be installed anywhere in the room (e.g. on the ceiling), and it can send IR commands to the split unit from up to 15 m away
ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Which answer is correct?

**Question 3**

How is the Split Unit Gateway connected to the split unit device?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A</strong></td>
<td>The cable is plugged onto the analog slot of the main printed circuit board in the split unit</td>
</tr>
<tr>
<td><strong>B</strong></td>
<td>The IR transmitter of the cable is affixed to the split unit’s receiver using the double-sided adhesive tape</td>
</tr>
<tr>
<td><strong>C</strong></td>
<td>The IR transmitter can be installed anywhere in the room (e.g. on the ceiling), and it can send IR commands to the split unit from up to 15 m away</td>
</tr>
</tbody>
</table>

Affix the IR transmitter onto the split unit’s receiver
Commissioning

ETS4 or ETS5 and the current application of the device are required for programming.

Ensure that the latest ETS application is used. Download from [www.abb.com/knx](http://www.abb.com/knx).

In addition to the ETS application, you will require the “ABB SUG/U 1.1 Configuration” app for commissioning; this can obtained free from the KNX Online Shop.

The device possesses an interface to the i-bus® Tool (reading out data and checking functions).
Download the ETS App (ABBSUG.etsapp) and the license file (*.license) from the KNX Online Shop

In the ETS:
- Install the app
- Add license

The app appears in the menu “Extras” → “ABB” → “ABB SUG/U Configuration”

The IR databases of the split unit devices are also installed during this process

The IR database files are updated online in the app
ETS App “ABB SUG/U 1.1 Configuration”

This App is needed for configuration of the ABB SUG/U 1.1 Split Unit Gateway. The manufacturer of the split unit and the model of the remote are loaded into the ETS application. ABB SUG/U 1.1 in the project can be processed at the same time. The download into the device is done by normal ETS download.
Commissioning

Add the Split Unit Gateway to the building or topology view

Click on the Gateway and start the app (menu “Extras” → “ABB” → “ABB SUG/U Configuration”)

Click the Gateway in the window of the “ABB SUG/U Configuration” app and select the remote control manufacturer and type in the “Properties” window

The functions supported by the split unit are displayed, and the IR codes of the selected remote control are adopted in the ETS application and parameters
ETS App “ABB SUG/U 1.1 Configuration”

1. ABB i-bus KNX Split Unit Gateway SUG/U 1.1
2. ETS App “ABB SUG/U 1.1 Configuration”
3. Manufacturer: DAININ
4. Remote control type: U-DK1.2
5. Cell point temperature range: 16.36 °C
7. Fan speeds: Automatic, Cool, Heat, Low, Medium, High, Fanstop

©ABB September 20, 2017 | Slide 62
Commissioning

Set the parameters as required depending on the supported split unit functions (see “Parameters” window)

Create group addresses and link with the objects

Program the physical address and load the application

Test the

- Settings and parameters in the Split Unit Gateway (i-bus® Tool)
- Functional implementation
  Control element/sensor – Split Unit Gateway
  – split unit device

![Diagram of ABB i-bus KNX Split Unit Gateway SUG/U 1.1](image-url)
**ETS parameters – General**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sending delay after bus voltage recovery, download and ETS reset</td>
<td>2 s</td>
</tr>
<tr>
<td>Limit number of telegrams</td>
<td>No</td>
</tr>
<tr>
<td>Enable group object “In operation”, 1 bit</td>
<td>Yes</td>
</tr>
<tr>
<td>Sending</td>
<td>Value 0</td>
</tr>
<tr>
<td>Sending cycle time</td>
<td>60 s</td>
</tr>
<tr>
<td>Enable group object “Request status values” 1 bit</td>
<td>Yes</td>
</tr>
<tr>
<td>Request with object value</td>
<td>1</td>
</tr>
<tr>
<td>Reaction after bus voltage recovery, download and ETS reset</td>
<td>Do not repeat last infrared command</td>
</tr>
<tr>
<td>Access with i-bus Tool</td>
<td>Read and write</td>
</tr>
</tbody>
</table>

**Note:** The i-bus tool is an optional diagnosis tool that is available free of charge on our website.
ETS parameters – Split unit settings

### 5.1.2 SUG/U1.1 Split Unit Gateway > Split Unit settings

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General</strong></td>
<td></td>
</tr>
<tr>
<td>Manufacturer</td>
<td>Daikin</td>
</tr>
<tr>
<td>Remote control (type)</td>
<td>U-DKL2</td>
</tr>
<tr>
<td><strong>Functions</strong></td>
<td></td>
</tr>
<tr>
<td>Note: Please select the remote control type with the ETS App “ABB SUG/U 1.1” (available free of charge at our KNX online shop)</td>
<td></td>
</tr>
<tr>
<td>Limit setpoint temperature range</td>
<td>No  Yes</td>
</tr>
<tr>
<td>Control fan speed with object</td>
<td>1 Bit up/down and 1 byte</td>
</tr>
<tr>
<td>Coding of 1 byte</td>
<td>0:Auto, 1:Low, 2:Med, 3:High, 4:High</td>
</tr>
<tr>
<td>Note: If the Split Unit supports more than 3 fan speeds, only 3 speeds are mapped to Low/Med/High. The ETS App shows how the fan speeds are mapped.</td>
<td></td>
</tr>
<tr>
<td>Send infrared commands</td>
<td>Only if calculated change  Yes</td>
</tr>
<tr>
<td>Enable “Simplified mode”</td>
<td>No  Yes</td>
</tr>
<tr>
<td>Enable “Silent mode”</td>
<td>No  Yes</td>
</tr>
<tr>
<td>Enable “Swing” (horizontal and vertical)</td>
<td>No  Yes</td>
</tr>
<tr>
<td>Note: Simplified mode, Silent mode and Swing must be supported by the Split Unit.</td>
<td></td>
</tr>
<tr>
<td>Enable “On/Off delay” function</td>
<td>No  Yes</td>
</tr>
<tr>
<td>On/Off delay</td>
<td>10  Yes  5 min</td>
</tr>
</tbody>
</table>
# ETS parameters – Functions

<table>
<thead>
<tr>
<th>SUG/UI1.1 Split Unit Gateway &gt; Functions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General</strong></td>
</tr>
<tr>
<td><strong>Split Unit settings</strong></td>
</tr>
<tr>
<td><strong>Functions</strong></td>
</tr>
<tr>
<td><strong>Forced operation</strong></td>
</tr>
<tr>
<td><strong>Window contact</strong></td>
</tr>
<tr>
<td><strong>Presence</strong></td>
</tr>
<tr>
<td><strong>Scenes</strong></td>
</tr>
<tr>
<td><strong>Boost</strong></td>
</tr>
<tr>
<td><strong>Status objects</strong></td>
</tr>
</tbody>
</table>

**Note:** function priority

1. Forced operation
2. Window contact
3. Presence, scenes, boost and group objects without priority

<table>
<thead>
<tr>
<th>Enable “Forced operation” function</th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enable “Window contact” function</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Enable “Presence” function</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Enable “Scene” function</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Enable “Boost” function</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>
## ETS parameters – Forced operation

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Split Unit On/Off</td>
<td>On</td>
</tr>
<tr>
<td>Setpoint Temperature</td>
<td>21°C</td>
</tr>
<tr>
<td>Operation mode</td>
<td>Auto</td>
</tr>
<tr>
<td>Fan speed</td>
<td>Auto</td>
</tr>
<tr>
<td>Vertical Swing</td>
<td>Off</td>
</tr>
<tr>
<td>Horizontal Swing</td>
<td>Off</td>
</tr>
<tr>
<td>Silent Mode</td>
<td>Off</td>
</tr>
<tr>
<td>Window contact</td>
<td></td>
</tr>
<tr>
<td>Presence</td>
<td></td>
</tr>
<tr>
<td>Scenes</td>
<td></td>
</tr>
<tr>
<td>Boost</td>
<td></td>
</tr>
<tr>
<td>Status objects</td>
<td></td>
</tr>
</tbody>
</table>

**Temperature Settings:**
- Heating: On
- Cooling: On
- Fan: On
- Drying: Off
- Unchanged: Off

**Fan Speed Settings:**
- Auto
- Low
- Medium
- High
- Unchanged
ETS parameters – Window contact

![ETS parameters – Window contact](image-url)
ETS parameters – Presence

<table>
<thead>
<tr>
<th>5.1.2 SUG/U1.1 Split Unit Gateway &gt; Presence</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General</strong></td>
</tr>
<tr>
<td><strong>Split Unit settings</strong></td>
</tr>
<tr>
<td><strong>Functions</strong></td>
</tr>
<tr>
<td><strong>Forced operation</strong></td>
</tr>
<tr>
<td><strong>Window contact</strong></td>
</tr>
<tr>
<td><strong>Presence</strong></td>
</tr>
<tr>
<td><strong>Scenes</strong></td>
</tr>
<tr>
<td><strong>Boost</strong></td>
</tr>
<tr>
<td><strong>Status objects</strong></td>
</tr>
</tbody>
</table>

**Reaction on “Presence” = 1**
- Monitoring time (0 = deactivated): 60 s
- Split Unit On/Off: On
- Setpoint temperature: 21
- Operation mode: Auto
- Fan speed: Auto
- Vertical Swing: Off
- Horizontal Swing: Off
- Silent mode: Off

**Reaction on “Presence” = 0 or end of monitoring time**
- Split Unit On/Off: Off

Modes: Off, On, Unchanged, Auto, Heating, Cooling, Fan, Drying, Unchanged
### ETS parameters – Scenes

#### 5.1.2 SUG/U1.1 Split Unit Gateway > Scenes

| General | Overwrite scenes on download | Yes
|---------|-----------------------------|-----|
| Split Unit settings | Assignment 1 to scene number 1..64 | Scene 2
| Functions | Split Unit On/Off | On
| Forced operation | Setpoint temperature | 21 °C
| Window contact | Operation mode | Auto
| Presence | Fan speed | Auto
| Scenes | Vertical Swing | Off
| Boost | Horizontal Swing | Off
| Status objects | Silent mode | Off
| Assignment 2 to scene number 1..64 | Scene 9
| Split Unit On/Off | On
| Setpoint temperature | 19 °C
| Operation mode | Cooling |
ETS parameters – Boost

<table>
<thead>
<tr>
<th>General</th>
</tr>
</thead>
<tbody>
<tr>
<td>Split Unit settings</td>
</tr>
<tr>
<td>Functions</td>
</tr>
<tr>
<td>Forced operation</td>
</tr>
<tr>
<td>Window contact</td>
</tr>
<tr>
<td>Presence</td>
</tr>
<tr>
<td>Scenes</td>
</tr>
<tr>
<td>Boost</td>
</tr>
<tr>
<td>Status objects</td>
</tr>
</tbody>
</table>

Boost function duration: 10 min
# ETS parameters – Status objects

<table>
<thead>
<tr>
<th>General</th>
<th>Status objects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Send status values</td>
<td>Enable group object <em>Status On/Off</em> 1-bit</td>
</tr>
<tr>
<td>Send status values after bus voltage recovery, download and ETS reset</td>
<td>Enable group object <em>Status setpoint temperature</em> 2 bytes</td>
</tr>
<tr>
<td></td>
<td>Enable group object <em>Status operating mode</em> 1 byte</td>
</tr>
<tr>
<td></td>
<td>Enable group object <em>Status fan speed</em> 1 byte</td>
</tr>
<tr>
<td></td>
<td>Enable group object <em>Status forced operation</em> 1-bit</td>
</tr>
<tr>
<td></td>
<td>Enable group object <em>Status window contact</em> 1 Bit</td>
</tr>
<tr>
<td></td>
<td>Enable group object <em>Status presence</em> 1-bit</td>
</tr>
<tr>
<td></td>
<td>Enable group object <em>Status boost</em> 1-bit</td>
</tr>
</tbody>
</table>

**Options**:
- No (update only)
- On change
- After request
- After a change or request
### ETS group objects

<table>
<thead>
<tr>
<th>Number</th>
<th>Name</th>
<th>Object Function</th>
<th>Length</th>
<th>C</th>
<th>R</th>
<th>W</th>
<th>T</th>
<th>U</th>
<th>Data Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>General</td>
<td>In operation</td>
<td>1 bit</td>
<td>C</td>
<td>R</td>
<td>-</td>
<td>T</td>
<td>-</td>
<td>boolean</td>
</tr>
<tr>
<td>22</td>
<td>General</td>
<td>Request status values</td>
<td>1 bit</td>
<td>C</td>
<td>-</td>
<td>W</td>
<td>-</td>
<td>-</td>
<td>trigger</td>
</tr>
<tr>
<td>23</td>
<td>Split Unit</td>
<td>Fan speed</td>
<td>1 byte</td>
<td>C</td>
<td>-</td>
<td>W</td>
<td>-</td>
<td>-</td>
<td>counter pulses (0.255)</td>
</tr>
<tr>
<td>24</td>
<td>Split Unit</td>
<td>Status fan speed</td>
<td>1 byte</td>
<td>C</td>
<td>R</td>
<td>-</td>
<td>T</td>
<td>-</td>
<td>counter pulses (0.255)</td>
</tr>
<tr>
<td>25</td>
<td>Split Unit</td>
<td>Fan up/down</td>
<td>1 bit</td>
<td>C</td>
<td>-</td>
<td>W</td>
<td>-</td>
<td>-</td>
<td>step</td>
</tr>
<tr>
<td>26</td>
<td>Split Unit</td>
<td>Operating mode</td>
<td>1 byte</td>
<td>C</td>
<td>-</td>
<td>W</td>
<td>-</td>
<td>-</td>
<td>HVAC control mode</td>
</tr>
<tr>
<td>27</td>
<td>Split Unit</td>
<td>Status operating mode</td>
<td>1 byte</td>
<td>C</td>
<td>R</td>
<td>-</td>
<td>T</td>
<td>-</td>
<td>HVAC control mode</td>
</tr>
<tr>
<td>28</td>
<td>Split Unit</td>
<td>Simplified</td>
<td>1 bit</td>
<td>C</td>
<td>-</td>
<td>W</td>
<td>-</td>
<td>-</td>
<td>cooling/heating</td>
</tr>
<tr>
<td>29</td>
<td>Split Unit</td>
<td>Silent mode</td>
<td>1 bit</td>
<td>C</td>
<td>-</td>
<td>W</td>
<td>-</td>
<td>-</td>
<td>boolean</td>
</tr>
<tr>
<td>30</td>
<td>Split Unit</td>
<td>Status silent mode</td>
<td>1 bit</td>
<td>C</td>
<td>R</td>
<td>-</td>
<td>T</td>
<td>-</td>
<td>boolean</td>
</tr>
<tr>
<td>31</td>
<td>Function</td>
<td>Scene</td>
<td>1 byte</td>
<td>C</td>
<td>-</td>
<td>W</td>
<td>-</td>
<td>-</td>
<td>scene control</td>
</tr>
<tr>
<td>32</td>
<td>Split Unit</td>
<td>On/Off</td>
<td>1 bit</td>
<td>C</td>
<td>-</td>
<td>W</td>
<td>-</td>
<td>-</td>
<td>switch</td>
</tr>
<tr>
<td>33</td>
<td>Split Unit</td>
<td>Status On/Off</td>
<td>1 bit</td>
<td>C</td>
<td>R</td>
<td>-</td>
<td>T</td>
<td>-</td>
<td>switch</td>
</tr>
<tr>
<td>34</td>
<td>Split Unit</td>
<td>Deactivate On/Off delay</td>
<td>1 bit</td>
<td>C</td>
<td>R</td>
<td>W</td>
<td>-</td>
<td>-</td>
<td>enable</td>
</tr>
<tr>
<td>35</td>
<td>Function</td>
<td>Forced operation</td>
<td>1 bit</td>
<td>C</td>
<td>-</td>
<td>W</td>
<td>-</td>
<td>-</td>
<td>enable</td>
</tr>
<tr>
<td>36</td>
<td>Function</td>
<td>Status forced operation</td>
<td>1 bit</td>
<td>C</td>
<td>R</td>
<td>-</td>
<td>T</td>
<td>-</td>
<td>enable</td>
</tr>
<tr>
<td>37</td>
<td>Function</td>
<td>Window contact</td>
<td>1 bit</td>
<td>C</td>
<td>-</td>
<td>W</td>
<td>-</td>
<td>-</td>
<td>window/door</td>
</tr>
<tr>
<td>38</td>
<td>Function</td>
<td>Status window contact</td>
<td>1 bit</td>
<td>C</td>
<td>R</td>
<td>-</td>
<td>T</td>
<td>-</td>
<td>window/door</td>
</tr>
<tr>
<td>39</td>
<td>Function</td>
<td>Presence</td>
<td>1 bit</td>
<td>C</td>
<td>-</td>
<td>W</td>
<td>-</td>
<td>-</td>
<td>occupancy</td>
</tr>
<tr>
<td>40</td>
<td>Function</td>
<td>Status presence</td>
<td>1 bit</td>
<td>C</td>
<td>R</td>
<td>-</td>
<td>T</td>
<td>-</td>
<td>occupancy</td>
</tr>
<tr>
<td>41</td>
<td>Split Unit</td>
<td>Setpoint temperature</td>
<td>2 bytes</td>
<td>C</td>
<td>-</td>
<td>W</td>
<td>-</td>
<td>-</td>
<td>temperature (°C)</td>
</tr>
<tr>
<td>42</td>
<td>Split Unit</td>
<td>Status setpoint temperature</td>
<td>2 bytes</td>
<td>C</td>
<td>R</td>
<td>-</td>
<td>T</td>
<td>-</td>
<td>temperature (°C)</td>
</tr>
<tr>
<td>43</td>
<td>Split Unit</td>
<td>Setpoint temperature up/down</td>
<td>1 bit</td>
<td>C</td>
<td>-</td>
<td>W</td>
<td>-</td>
<td>-</td>
<td>step</td>
</tr>
<tr>
<td>44</td>
<td>Split Unit</td>
<td>Deactivate setpoint temperature up/down</td>
<td>1 bit</td>
<td>C</td>
<td>R</td>
<td>W</td>
<td>-</td>
<td>-</td>
<td>enable</td>
</tr>
<tr>
<td>45</td>
<td>Split Unit</td>
<td>Vertical swing</td>
<td>1 bit</td>
<td>C</td>
<td>-</td>
<td>W</td>
<td>-</td>
<td>-</td>
<td>switch</td>
</tr>
<tr>
<td>46</td>
<td>Split Unit</td>
<td>Status vertical swing</td>
<td>1 bit</td>
<td>C</td>
<td>R</td>
<td>-</td>
<td>T</td>
<td>-</td>
<td>switch</td>
</tr>
<tr>
<td>47</td>
<td>Split Unit</td>
<td>Horizontal swing</td>
<td>1 bit</td>
<td>C</td>
<td>-</td>
<td>W</td>
<td>-</td>
<td>-</td>
<td>switch</td>
</tr>
<tr>
<td>48</td>
<td>Split Unit</td>
<td>Status horizontal swing</td>
<td>1 bit</td>
<td>C</td>
<td>R</td>
<td>-</td>
<td>T</td>
<td>-</td>
<td>switch</td>
</tr>
<tr>
<td>49</td>
<td>Function</td>
<td>Boost</td>
<td>1 bit</td>
<td>C</td>
<td>-</td>
<td>W</td>
<td>-</td>
<td>-</td>
<td>switch</td>
</tr>
<tr>
<td>50</td>
<td>Function</td>
<td>Status boost</td>
<td>1 bit</td>
<td>C</td>
<td>R</td>
<td>-</td>
<td>T</td>
<td>-</td>
<td>switch</td>
</tr>
</tbody>
</table>
Functional description of operation

<table>
<thead>
<tr>
<th>Rocker switch 1</th>
<th>On/Off</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rocker switch 2</td>
<td>Fan up/down</td>
</tr>
<tr>
<td>Rocker switch 3</td>
<td>Setpoint temp. 19 °C and 21 °C</td>
</tr>
<tr>
<td>Rocker switch 4</td>
<td>Setpoint temp. 23 °C and 25 °C</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Numbe Group</th>
<th>Name</th>
<th>Object Function</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>4212</td>
<td>S11 Switching</td>
<td>input / output</td>
<td>1 bit</td>
</tr>
<tr>
<td>4218</td>
<td>LED1: Status</td>
<td>input</td>
<td>1 bit</td>
</tr>
<tr>
<td>4219</td>
<td>LED2: Status</td>
<td>input</td>
<td>1 bit</td>
</tr>
<tr>
<td>4205</td>
<td>S2: Switching</td>
<td>input / output</td>
<td>1 bit</td>
</tr>
<tr>
<td>4221</td>
<td>S3.1: Value switching</td>
<td>input / output</td>
<td>2 bytes</td>
</tr>
</tbody>
</table>
Functional description of operation

<table>
<thead>
<tr>
<th>Rocker switch 1</th>
<th>On/Off</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rocker switch 2</td>
<td>Setpoint adjustment</td>
</tr>
<tr>
<td>Rocker switch 3</td>
<td>Fan up/down</td>
</tr>
</tbody>
</table>

Split unit (interior unit)

Room thermostat

<table>
<thead>
<tr>
<th>Num Group</th>
<th>Name</th>
<th>Object Function Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Cooling control value</td>
<td>Output 1 bit</td>
</tr>
<tr>
<td>6</td>
<td>Actual temperature</td>
<td>Output 2 bytes</td>
</tr>
<tr>
<td>11</td>
<td>Actual set value</td>
<td>Output 2 bytes</td>
</tr>
<tr>
<td>12</td>
<td>Operating mode</td>
<td>Input/output 1 byte</td>
</tr>
<tr>
<td>13</td>
<td>Superimposed operating mode</td>
<td>Input 1 byte</td>
</tr>
<tr>
<td>35</td>
<td>Fahrenheit</td>
<td>Input 1 bit</td>
</tr>
<tr>
<td>47</td>
<td>Commissioned</td>
<td>Output 1 bit</td>
</tr>
<tr>
<td>50</td>
<td>rocker 1</td>
<td>switching 1 bit</td>
</tr>
<tr>
<td>74</td>
<td>rocker 3</td>
<td>switching 1 bit</td>
</tr>
<tr>
<td>200</td>
<td>LED 1</td>
<td>status 1 bit</td>
</tr>
</tbody>
</table>

Split Unit Gateway SUG/U 1.1

<table>
<thead>
<tr>
<th>Num Group</th>
<th>Name</th>
<th>Object Function</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>4205</td>
<td>Split Unit</td>
<td>Fan up/down 1 bit</td>
</tr>
<tr>
<td>6</td>
<td>4212</td>
<td>Split Unit</td>
<td>Operating mode 1 byte</td>
</tr>
<tr>
<td>12</td>
<td>4212</td>
<td>Split Unit</td>
<td>On/Off 1 bit</td>
</tr>
<tr>
<td>13</td>
<td>4213</td>
<td>Split Unit</td>
<td>Status On/Off 1 bit</td>
</tr>
<tr>
<td>21</td>
<td>4213</td>
<td>Split Unit</td>
<td>Setpoint temperature 2 bytes</td>
</tr>
<tr>
<td>23</td>
<td>4221</td>
<td>Split Unit</td>
<td>Setpoint temperature up/down 1 bit</td>
</tr>
</tbody>
</table>
Functional description of window contact

<table>
<thead>
<tr>
<th>Num Group</th>
<th>Name</th>
<th>Object Function</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>26</td>
<td>General</td>
<td>Reset</td>
<td>1 bit</td>
</tr>
<tr>
<td>27</td>
<td>General</td>
<td>Status Reset</td>
<td>1 bit</td>
</tr>
<tr>
<td>30</td>
<td>Zone A</td>
<td>Status</td>
<td>1 bit</td>
</tr>
<tr>
<td>31</td>
<td>Zone B</td>
<td>Status</td>
<td>1 bit</td>
</tr>
<tr>
<td>17</td>
<td>4217</td>
<td>Function Window contact</td>
<td>1 bit</td>
</tr>
<tr>
<td>21</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Functional description of presence

- Presence detector
- Presence detector
- Presence detector

<table>
<thead>
<tr>
<th>Num</th>
<th>Group</th>
<th>Name</th>
<th>Object Function</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>4219</td>
<td>Pt: Movement (master)</td>
<td>Output</td>
<td>1 bit</td>
</tr>
<tr>
<td>33</td>
<td></td>
<td>BR: Brightness</td>
<td>Output</td>
<td>2 bytes</td>
</tr>
<tr>
<td>20</td>
<td>4219</td>
<td>Function</td>
<td>Presence</td>
<td>1 bit</td>
</tr>
<tr>
<td>21</td>
<td>4219</td>
<td>Split Unit</td>
<td>Setpoint temperature</td>
<td>2 bytes</td>
</tr>
<tr>
<td>22</td>
<td></td>
<td>Split Unit</td>
<td>Setpoint temperature up/down</td>
<td>1 bit</td>
</tr>
</tbody>
</table>
Function description of scenes

Recall of a scene via a button, timer switch, touch display, ...

| Rocker switch 1 | Scenes 3 and 9 |
| Rocker switch 2 | Scenes 38 and 52 |

<table>
<thead>
<tr>
<th>Num Group</th>
<th>Name</th>
<th>Object Func</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4211</td>
<td>S1.1: Number of light scene</td>
<td>Output</td>
</tr>
<tr>
<td>3</td>
<td>4211</td>
<td>S1.2: Number of light scene</td>
<td>Output</td>
</tr>
<tr>
<td>5</td>
<td>4211</td>
<td>S2.1: Number of light scene</td>
<td>Output</td>
</tr>
<tr>
<td>7</td>
<td>4211</td>
<td>S2.2: Number of light scene</td>
<td>Output</td>
</tr>
<tr>
<td>11</td>
<td>4211</td>
<td>Function</td>
<td>Scene</td>
</tr>
<tr>
<td>12</td>
<td>4211</td>
<td>Split Unit</td>
<td>On/Off</td>
</tr>
<tr>
<td>21</td>
<td>4211</td>
<td>Split Unit</td>
<td>Setpoint temperature</td>
</tr>
<tr>
<td>23</td>
<td>4211</td>
<td>Split Unit</td>
<td>Setpoint temperature up/down</td>
</tr>
</tbody>
</table>
Testing and troubleshooting

- i-bus® Tool
- ETS group/bus monitor (status values)
- ETS application version
- Smartphone camera
Testing and troubleshooting: i-bus® Tool

A professional service tool

– Internal information and states of the device hardware and application that were not previously available or were available only after considerable effort are now shown in a transparent manner

– The i-bus® Tool is optional, i.e. the KNX devices must still be commissioned using the ETS

– The i-bus® Tool connects to the physical address of a KNX device via the standard interface (USB, IP)

– It is then possible to trigger the desired functions, read values, simulate states and make settings for the connected device in a targeted manner
Testing with the i-bus® Tool – entering the physical address and connecting
Testing with the i-bus® Tool – display of supported functions of the remote control
Testing with the i-bus® Tool – display of supported functions of the remote control

Manufacturer/remote control (type)
- The manufacturer and type of remote control are shown here

Setpoint temperature range
- Displays the setpoint temperature range supported by the split unit
- This can differ from the parameterization in the ETS
- Example:
  The split unit supports 16...32 °C, but the setpoint temperature range has been restricted in the ETS, e.g. 18...24 °C. The Split Unit Gateway sends a maximum setpoint value of 24 °C when in heating mode

Operating modes
- The operating modes supported by the split unit are displayed
- Some models do not support all operating modes
Testing with the i-bus® Tool – display of supported functions of the remote control

Fan speeds
- If a Split Unit does not have exactly three fan speeds, the fan speeds will be mapped to the corresponding group objects
- Example:
  The split unit supports five fan speeds. In this case, speed 1 is assigned as LOW, speed 3 as MED and speed 5 as HIGH. Speeds 2 and 4 cannot be controlled with the Split Unit Gateway

Slat adjustment
- Display of whether the split unit supports horizontal or vertical swing

Silent Mode
- Display of whether the split unit supports Silent Mode

Access with i-bus® Tool
- Access to the device can be restricted in the ETS via parameters
Testing with the i-bus® Tool – status indication and operating various functions
Testing with the i-bus® Tool – status indication and operating various functions

If a button is highlighted green, the corresponding function is active
If a function is grayed out, it is not enabled in the ETS or is not supported by the split unit
If a priority is activated (forced operation, window contact), all functions with a lower priority are disabled (lock symbol)

Note: Access to the device must be enabled via a parameter in the ETS for operation

On/Off
– The split unit can be switched on and off via this button

Setpoint temperature
– The current setpoint temperature is displayed here and can be set

Max. heating setpoint temperature/Min. cooling setpoint temperature
– The setpoint limit parameterized in the ETS is displayed
– The green LED shows whether the limit is activated or deactivated via the object “Deactivate setpoint temperature limit”.

Testing with the i-bus® Tool – status indication and operating various functions

Send setpoint temperature cyclically...

– The transmitter of the Split Unit Gateway must be correctly positioned on the receiver of the split unit. This function can be used to check whether the transmitter is installed in the correct place

Operating mode, Fan speed, Swing, Silent Mode

– The respective functions can be operated here, and the status is displayed

Scene number

– The set scene can be recalled or saved

– The prerequisite is that the corresponding scene number is parameterized in the ETS

Forced operation/Window contact/Presence

– The function Forced operation can be activated/deactivated

After disconnection from the i-bus® tool, the state before connection is restored.
i-bus® Tool: positioning the IR transmitter

The IR transmitter of the Split Unit Gateway must be correctly positioned on the receiver of the split unit.

The function “Send temperature cyclically...” enables cyclical values to be sent, which are then confirmed by the split unit with an acknowledgment tone.

This makes it possible to check whether the transmitter is in the correct position before it is affixed.

30 telegrams are sent at intervals of 4 seconds (2 minutes)
Testing and troubleshooting: ETS monitor

ETS group/bus monitor
- ETS group monitor can receive and send group telegrams
- ETS bus monitor can only receive group telegrams
- Send telegrams (e.g. control element or group monitor) and evaluate status telegrams sent by the Split Unit Gateway
Testing and troubleshooting: application

ETS application version

- Check the ETS application version
  → Properties
  → Information
  → Application program

- The latest version is available at: www.abb.com/knx
Testing and troubleshooting: smartphone camera

Important: This test function depends on the smartphone manufacturer and model!

The photo chip in a smartphone senses more than human eye can, and it also detects IR light.

Smartphones usually have an IR blocking filter, but the signal from a transmitter held in front of the lens can nevertheless still be seen in camera recording mode.

A light lights up in the smartphone display if IR radiation is present (KNX command to the Split Unit Gateway or with the test function of the i-bus® Tool, “Send temperature cyclically…”)

It is recommended to use the front camera. Its equipment quality is not as high, and it does not possess an infrared filter.
Question 1

The ETS App “ABB SUG/U 1.1” …

A. Allows the split unit to be operated via a smartphone or tablet

B. Is required in addition to the ETS application during commissioning. The IR codes of the selected remote control are adopted in the ETS.

C. Reads the supported functions from the split unit and forwards them to the ETS for parameterization
ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Which answer is correct?

**Question 1**

- **The ETS App “ABB SUG/U 1.1” …**

  - A. Allows the split unit to be operated via a smartphone or tablet
  - B. Is required in addition to the ETS application during commissioning. The IR codes of the selected remote control are adopted in the ETS.
  - C. Reads the supported functions from the split unit and forwards them to the ETS for parameterization

Adoption of the IR remote control data in the ETS
Question 2

The function “Forced operation” ...

A. Can be activated by recalling scene 1...64

B. Establishes the parameterized state of the split unit, and operation via objects with lower priority is then disabled

C. Always switches the split unit off. A switching OFF delay can also be parameterized
Question 2

The function “Forced operation” ...

A
Can be activated by recalling scene 1...64

B
Establishes the parameterized state of the split unit, and operation via objects with lower priority is then disabled

C
Always switches the split unit off. A switching OFF delay can also be parameterized
**Question 3**

The i-bus® Tool can be used to …

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A</strong></td>
<td>Display information or status values of the Split Unit Gateway and trigger or test desired functions</td>
</tr>
<tr>
<td><strong>B</strong></td>
<td>Set the parameters or connect group addresses in a device independently of the ETS4 or ETS5</td>
</tr>
<tr>
<td><strong>C</strong></td>
<td>Perform a faster download of the application than the ETS</td>
</tr>
</tbody>
</table>
Which answer is correct?

**Question 3**

The i-bus® Tool can be used to …

A. Display information or status values of the Split Unit Gateway and trigger or test desired functions

B. Set the parameters or connect group addresses in a device independently of the ETS4 or ETS5

C. Perform a faster download of the application than the ETS

**Trigger functions, read values, simulate states, …**
Disclaimer

The information in this document is subject to change without notice and should not be construed as a commitment by ABB. ABB assumes no responsibility for any errors that may appear in this document.

In no event shall ABB be liable for direct, indirect, special, incidental or consequential damages of any nature or kind arising from the use of this document, nor shall ABB be liable for incidental or consequential damages arising from use of any software or hardware described in this document.

© Copyright [2017] ABB. All rights reserved.